

What is claimed is:

1. A rotation sensor comprising:

an active rotor;

5 a follower rotor arranged adjacent to the active rotor, the follower rotor sharing a rotation axis with the active rotor and capable of rotation following the active rotor; and

a casing containing the active and follower rotors and allowing the rotors to rotate freely,

10 wherein

a disk-like slip-ring retainer plate is secured to an outer periphery of the active rotor for rotation together therewith,

15 a pair of feeder slip rings, a pair of rotation-angle measuring slip rings, and a pair of torque measuring slip rings are all disposed on the slip-ring retainer plate and concentrically with the active rotor,

the rotation-angle measuring slip rings and the torque measuring slip rings are covered with conductive resin,

20 the torque measuring slip rings are arranged on one side of the slip-ring retainer plate facing the follower rotor, the feeder slip rings and the rotation-angle measuring slip rings are arranged on the other side of the slip-ring retainer plate opposite to the torque measuring slip rings,

25 feeder brushes and rotation-angle measuring brushes are fixed to the casing for sliding contact with the feeder slip rings and the rotation-angle measuring slip rings, respectively,

30 a disk-like torque measuring brush retainer plate is connected to an outer periphery of the follower rotor for rotation together therewith,

torque measuring brushes are fixed to the torque measuring brush retainer plate for sliding contact with the respective torque measuring slip rings,

the feeder bushes are electrically connected to each other and are connected to a power supply device,

the rotation-angle measuring brushes are electrically connected to the feeder brushes and a rotation-angle

5 computing device, and

the torque measuring brushes are electrically connected to the feeder brushes and a torque computing device.

2. The rotation sensor of claim 1, wherein the conductive
10 resin comprises carbon-containing epoxy resin.

3. The rotation sensor of claim 1 or 2 wherein the disk-like torque measuring brush retainer plate is connected to the follower rotor via a coupler having rigidity in the
15 circumferential direction.

4. The rotation sensor of claim 1 wherein the coupler absorbs an axis misalignment of the follower rotor in a plane perpendicular to the rotation axis of the rotors, thereby
20 keeping the torque measuring brushes in position.

5. The rotation sensor of claim 1 wherein the pair of torque measuring slip rings are shaped like an arc extending about the rotation axis of the follower rotor and are
25 disposed on an identical side of the disk-like slip-ring retainer plate, and one of the torque measuring slip rings has a clockwise end serving as a reference position for torque detection voltage, and the other of the torque measuring slip rings has a counterclockwise end serving as a
30 reference position for torque detection voltage.